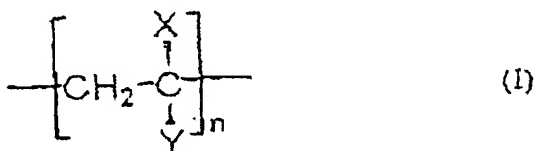


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## CLAIMS

1. A novel compound, characterized in that it comprises a hemoprotein associated with a sequenced  
 5 block copolymer comprising a hydrophilic segment, that is an oligosaccharide or a polysaccharide, linked to at least one hydrophobic segment of formula



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in which:

- X represents H or an alkyl, CN or CONHR radical,
- Y represents a COOR', CONHR" or C<sub>6</sub>H<sub>5</sub> radical,

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with R, R' and R" representing, independently of one another, a hydrogen atom, a linear or branched C<sub>1</sub> to C<sub>20</sub> alkyl group, a linear or branched C<sub>1</sub> to C<sub>20</sub> alkoxy group, an amino acid radical, a mono- or  
 20 polyhydroxylated acid radical or a C<sub>5</sub> to C<sub>12</sub> aryl or heteroaryl radical, and the forms associated with a gas.

2. The novel compound as claimed in claim 1,  
 25 characterized in that the hemoprotein is a normal hemoprotein, such as cytochromes or myoglobins, or a modified hemoprotein, in particular a natural or modified hemoglobin, that is for example bridged, polymerized, mutated or comprises more or less long  
 30 peptide chains, or else a hemoprotein analogue in which the iron is substituted with another metal, for example with cobalt, magnesium, copper or zinc.

3. The compound as claimed in claim 1, characterized in that the hemoprotein is a normal or modified hemoglobin.
- 5 4. The compound as claimed in any one of claims 1 to 3, characterized in that, in formula (I), X represents a CN radical.
- 10 5. The compound as claimed in claim 4, in which the hydrophobic segment is a poly(alkyl cyanoacrylate).
- 15 6. The compound as claimed in any one of claims 1 to 5, characterized in that the hydrophilic segment that is saccharide in nature is a natural or synthetic oligosaccharide or polysaccharide, that may or may not be modified, in particular dextran, where appropriate sulfated, or heparin.
- 20 7. The compound as claimed in any one of claims 1 to 3, characterized in that X represents H and Y a phenyl or ester radical.
- 25 8. The compound as claimed in any one of claims 1 to 7, characterized in that it is provided in the form of particles of 1 nm to 1 mm.
9. The compound as claimed in claim 8, characterized in that it is provided in the form of nanoparticles.
- 30 10. The use of the compound as claimed in claim 9, as a human or animal blood substitute.
- 35 11. The use of the compound as claimed in claim 10, as an adjuvant for antitumor compositions or other antitumor means, for example as a radiosensitizing agent.
12. The use of the compound as claimed in any one of

claims 1 to 3 and 6 to 8, as agent for depolluting gases, such as carbon monoxide or nitric oxide.

- 5 13. A pharmaceutical composition, characterized in that it contains a therapeutically effective amount of at least one compound as claimed in any one of claims 1 to 6 or 9, in the form of nanoparticles in combination with a pharmaceutically acceptable vehicle.